Claims

1. Use of nanoparticles made of a polymeric material, said nanoparticles comprising said polymeric material, one or more substance(s) physiologically effective in the treatment of cancer upon delivery to a mammal, one or more stabilizer(s) for said nanoparticles allowing targeting of said physiologically effective substance(s) to a specific site within said mammalian body and/or a surfactant coating on said nanoparticles, said nanoparticles optionally being provided within a physiologically acceptable carrier and/or diluent allowing the delivery of said nanoparticles to the target within said mammal after administration, for the manufacture of a medicament for the treatment of cancer in said mammal.

2. The use according to claim 1 for the treatment of brain cancer in said mammal.

3. The use according to claim 1 or claim 2, wherein said nanoparticles comprise particles of said polymeric material having a diameter of below 1,000 nm, preferably of from 1 to 1,000 nm.

4. The use according to any of the claims 1 to 3, wherein said polymeric material is selected from the group consisting of polyacrylates, polymethacrylates, polycyanoacrylates, polyacrylamides, polylactates, polyglycolates, polyanhydrates, polyorthoesters, gelatin, polysaccharides, albumin, polystyrenes, polyvinyls, polyacroöein, polyglutaraldehydes and derivatives, copolymers and mixtures thereof.

5. The use according to any of the claims 1 to 4, wherein said nanoparticles comprise said physiologically effective substance(s) to be delivered to said mammal in the form adsorbed, absorbed and/or incorporated thereto.

6. The use according to any of the claims 1 to 5, wherein said physiologically effective substance(s) to be delivered to said mammal comprise(s) one or more chemotherapeutic agent(s) for the cancer treatment, preferably alkylating agents, antimetabolites, natural anticancer products, hormones, metal co-ordination complexes and mixtures thereof, more preferably nitrogen mustards, nitroso ureas, ethylene imines and methyl-melamines, folic acid analogs, pyrimidine analogs, purine analogs, vinca alkaloids, epipodophyllotoxins, antibiotics, estrogens, gonadotropin-releasing hormon analogs, antiestrogens, androgens, platinum complexes and mixtures thereof, even more preferred doxorubicin and/or mitoxantrone.

7. The use according to any of the claims 1 to 6, wherein the stabilizer and/or surfactant coating material is selected from the group consisting of stabilizers/surfactants which allow a passage of said nanoparticles including said physiologically effective substance(s) across the blood brain barrier in said mammal and stabilizers/surfactants which allow a release of said physiologically effective substance(s) from said nanoparticles and a passage of said substance(s) across the blood brain barrier separate from said nanoparticles, preferably wherein said stabilizer/surfactant comprises a substance selected from the group consisting of polysorbates, dextrans, carboxylic acid esters of multifunctional alcohols, polyoxamers, polyoxamines, alkoxylated ethers, alkoxylated esters, alkoxylated mono-, di- and triglycerides, alkoxylated phenols and diphenols, substances of the Genapol ^{R} and Bauki ^{R} series, metal salts of carboxylic acids, metal salts of alcohol sulfates, and metal salts of sulfosuccinates and mixtures of two or more of said substances, more preferably wherein said stabilizer/surfactant comprises a substance selected from the group consisting of polysorbate 20, polysorbate 40, polysorbate 60, polysorbate 80, polysorbate 81, polysorbate 85, dextran 12.000, dextran 70,000, fatty acid esters of glycerol and sorbitol as glycerol monostearate, sorbitan monostearate and sorbitan monooleate, polyoxamer 188 (Pluronic R F68), ethoxylated ethers, ethoxylated esters, ethoxylated triglycerides, ethoxylated phenols

and diphenols, metal salts of fatty acids and of fatty alcohol sulfates, more preferably the sodium salts of fatty acids and of fatty alcohol sulfates, even more preferably sodium stearate and sodium lauryl sulfate, and mixtures of two or more of said substances, even more preferably polysorbate 80, polysorbate 85, dextran 12,000 or dextran 70,000 and mixtures thereof and mixtures of the stabilizers/surfactants with other stabilizers/surfactants.

8. The use according to any of the claims 1 to 7, wherein said carrier and/or diluent is/are selected from the group consisting of water, physiologically acceptable aqueous solutions containing salts and/or buffers and any other solution acceptable for administration to a mammal.

9. The use according to any of the claims 1 to 8, wherein the administration is an i. v. administration.

10. The use according to any of the claims 1 to 9, wherein said mammal is a human.

11. Nanoparticles made of a polymeric material, said nanoparticles comprising said polymeric material, one or more substance(s) physiologically effective in the treatment of cancer upon delivery to a mammal, one or more stabilizer(s) for said nanoparticles allowing targeting of said physiologically effective substance(s) to a specific site within said mammalian body and/or a surfactant coating on said nanoparticles, said nanoparticles optionally being provided within a physiologically acceptable carrier and/or diluent allowing the delivery of said nanoparticles to the target within said mammal after administration, for the treatment of cancer in said mammal.

12. A process for the treatment of cancer, particularly of brain cancer, in mammals, said process comprising the step of administering to said mammals nanoparticles made of a polymeric material, said nanoparticles comprising said polymeric material, one or more substance(s) physiologically effective in the treatment of cancer upon delivery to a

mammal, one or more stabilizer(s) for said nanoparticles allowing targeting of said physiologically effective substance(s) to a specific site within said mammalian body and/or a surfactant coating on said nanoparticles, said nanoparticles optionally being provided within a physiologically acceptable carrier and/or diluent allowing the delivery of said nanoparticles to the target within said mammal after administration, in an amount effective for the treatment of cancer.

13. The process of claim 12, wherein the administration is an i.v. or i.p. administration.

14. The process according to claim 12 or claim 13, wherein the treatment is a treatment of brain cancer.

Add A1

add B2